Journal of the Royal Society of Arts

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ELECTION OF CHAIRMAN OF COUNCIL

At the meeting of the Council held on Monday, 13th July, and reported below, the Council unanimously elected The Right Honourable the Earl of Radnor, K.C.V.O., Chairman of the Council for the ensuing year.

PRESENTATION OF THE ALBERT MEDAL FOR 1953

His Royal Highness the Duke of Edinburgh, President of the Society, presented the Albert Medal for 1953 to Dr. E. D. Adrian, O.M., M.D., P.R.S., at Buckingham Palace on Thursday, 16th July, 1953. The medal, as announced in the *Journal* of 29th May, 1953, was awarded to Dr. Adrian "for his outstanding contributions to neuro-physiology".

The presentation was attended by the following members of Council: The Earl of Radnor (Chairman); Professor E. N. da C. Andrade; Mr. F. H. Andrews; Sir Alfred Bossom, Bt.; Sir Frank Brown; Mr. Wells Coates; Professor E. C. Dodds; Mr. P. A. Le Neve Foster; Mr. John Gloag; Sir Ernest Goodale; Mr. A. C. Hartley; Lord Horder; Mr. F. A. Mercer; Sir Francis Meynell; Mr. John A. Milne; Lord Nathan; Sir William Ogg; Mr. E. M. Rich; Mr. A. R. N. Roberts; Sir Andrew Rowell; Mr. E. Munro Runtz; Mr. Gordon Russell; Sir Harold Saunders; Sir Selwyn Selwyn-Clarke; Sir John Simonsen; Sir Stephen Tallents; Mr. William Will; Sir Griffith Williams; Sir John Woodhead, and Miss Anna Zinkeisen; with Mr. K. W. Luckhurst (Secretary), and Mr. R. V. C. Cleveland-Stevens (Assistant Secretary).

In addressing Dr. Adrian, the President explained that it was the Society's practice in making these awards to interpret the terms of reference very widely, and to honour great distinction wherever it was to be found. He mentioned in particular that among the many famous previous recipients were Louis Pasteur, Madame Curie, Sir Ronald Ross, and the discoverers of penicillin.

EXTRAORDINARY MEETING OF COUNCIL

Immediately after the presentation of the Albert Medal, the members of the Council attending the ceremony proceeded to hold an Extraordinary Meeting, at which His Royal Highness the President took the Chair. Having obtained leave from His Royal Highness, the Chairman of Council called on the Secretary to read the following proposed resolution:

> Whereas certain Noblemen, Clergy, Gentlemen and Merchants met at Rawthmell's Coffee House, Henrietta Street, Covent Garden, on the 22nd day of March, 1754, to form a Society for the Encouragement of Arts, Manufactures and Commerce in Great Britain, as is duly recorded in the Minutes of this first meeting of the said Society
>
> Now it is hereby resolved that the bi-centenary of the said Society, now the Royal Society of Arts incorporated by Charter dated 10th June, 1847, be suitably commemorated in the year 1954 and that the celebrations begin on Monday, the 22nd day of March, with Divine Service at the Church of St. Martin-in-the-Fields, to be followed by a Special Meeting of Members of the Society in the Society's House, John Adam Street, Adelphi, at which congratulatory addresses of kindred Societies may be presented.

His Royal Highness then asked whether it was the wish of the Council that this resolution should be adopted, and their assent being given, and the resolution accordingly having been passed, the proceedings ended.

PUBLICATION OF A LIBRARY CATALOGUE

A catalogue of those books in the library which are available for loan to Fellows of the Society has now been issued.

New additions to the library have for a time been listed in the *Journal* at intervals. The catalogue gives details of those books that have not been recorded in this way, arranging them by subject. It does not, of course, include the library's reference collections of the catalogues of the world's major international exhibitions, and of books published before 1830 dealing with the subjects which interested the Society in its early days. These, with the Society's own records, may always be consulted in the library.

Fellows may not be aware that they may borrow books by post or by a telephone request; books are posted to Fellows anywhere in the United Kingdom.

The catalogue may be obtained, for two shillings and sixpence, on application to the Secretary.

THE SOCIETY'S CHRISTMAS CARD

An order form for the Society's Christmas Card for 1953 is included at the end of this issue of the *Journal*. The illustration which will appear on the card was reproduced in the *Journal* on 29th May (page 450).

MEETING OF COUNCIL

A meeting of Council was held on Monday, 13th July, 1953. Present: The Earl of Radnor (in the Chair); Mr. F. H. Andrews; Sir Alfred Bossom, Bt.; Sir Frank Brown; Sir John Forsdyke; Mr. P. A. Le Neve Foster; Mr. John Gloag; Sir Ernest Goodale; Mr. A. C. Hartley; Dr. R. W. Holland; Lord Horder; Sir Harry Lindsay; Mr. G. K. Menzies; Sir Francis Meynell; Mr. J. A. Milne; Mr. O. P. Milne; Lord Nathan; Mr. A. R. N. Roberts; Sir Andrew Rowell; Mr. E. Munro Runtz; Mr. Gordon Russell; Sir Harold Saunders; Sir Selwyn Selwyn-Clarke; Sir John Simonsen; Sir Stephen Tallents; Mr. William Will; Sir Griffith Williams; Mr. J. G. Wilson; Sir John Woodhead, and Miss Anna Zinkeisen; with Mr. K. W. Luckhurst (Secretary) and Mr. R. V. C. Cleveland-Stevens (Assistant Secretary).

ELECTIONS

The following candidates were duly elected Fellows of the Society:

Anderson, Sir Colin, London.
Argyll, His Grace the Duke of, Argyll.
Austen, Charles Albert, Salisbury, Wilts.
Black, Ian Hervey Stuart, Glasgow.
Breeze, George, M.Com., Liverpool.
Cheetham, Colin Reginald, London.
Chopra, Dr. Shanti Saroop, Bombay, India.
Coughtrie, Thomas, Bellshill, Lanarkshire.
Dobbs, Arthur Cyril, Willerby, E. Yorks.
Eudes, Raymond, B.A., LL.L., M.P., Montreal, Canada.
Frankland, Frederick Herston, New York, U.S.A.
Freeman, Charles, Bournemouth, Hants.
Gamble, Thomas, Loughborough, Leics.
Grieve, Miss Mary M., London.
Hewett, Cecil Alec, Laindon, Essex.
Jecock, James, Sutton, Surrey.
Kahn, Ely Jacques, A.B., B.Arch., New York, U.S.A.
Lamb, Lynton, Chelmsford, Essex.
Lambert, Martin James, B.Arch., Ottawa, Ontario, Canada.
Lewis, Stanley Cornwell, A.R.C.A., Llanstephan, Carms.
Lines, Walter, Godstone, Surrey.
Maass, Professor Otto, C.B.E., Ph.D., D.Sc., F.R.S., Montreal, Canada.
Marchand, Baron Georges Ernest Edmond, Edinburgh.
Nairn, Andrew, Glasgow.
Neville, William Joseph John, Conway, Caerns.
Oram, Lionel Frederick, Bristol.
Pearlman, Alec, Harrow, Middx.
Plymouth, the Right Hon. the Earl of, Ludlow, Salop.
Rennie, William, J.P., Glasgow.
Rogers, William George, M.M., Reading, Berks.
Rosebery, the Right Hon. the Earl of, K.T., P.C., D.S.O., Leighton Buzzard, Beds.
Sebba, Felix, M.Sc., Ph.D., D.I.C., Rondebosch, South Africa.

Silver, Adolph Nathaniel, London.
Smith, Harold Dunage, London.
Smith, James Scott, London.
Spencer, the Right Hon. Earl, T.D., M.A., F.S.A., Northampton.
Stanhope, the Right Hon. Earl, K.G., P.C., D.S.O., M.C., Chevening, Kent.
Tripp, Basil Howard, Sanderstead, Surrey.
Warren, Professor Frank Louis, Ph.D., D.I.C., Pietermaritzburg, South Africa.
Watt, Nigel John Vale, Lusaka, Northern Rhodesia.

Admitted under Bye-Law 66:

Tottenham Public Libraries, London.

CHANGE OF TREASURER

Sir Harry Lindsay having found it necessary to resign his Treasurership, Mr. Peter Le Neve Foster was elected Treasurer in his place, and Sir Harry Lindsay was elected into the Vice-Presidency falling vacant through Mr. Le Neve Foster's change of office.

RE-DECORATION

It was decided that the exterior of the Society's House should be re-decorated in the early autumn.

RE-APPOINTMENT OF STANDING COMMITTEES, ETC.

Standing Committees were re-appointed for the new Session.

THE LATE MR. G. C. SCHLUTER

It was reported that the late Mr. G. C. Schluter, who had been a Fellow of the Society since 1935, had left the sum of £100 to the Society "for their general purposes as a mark of appreciation and to further their good work".

HONORARY CORRESPONDING MEMBER IN SOUTH AUSTRALIA

Mr. T. E. Barr Smith was appointed Honorary Corresponding Member in South Australia.

OTHER BUSINESS

A quantity of formal and financial business was transacted.

SIR AMBROSE HEAL

Sir Ambrose Heal was the guest of honour at a luncheon held by the Faculty of Royal Designers for Industry on 30th June to celebrate his recent eightieth birthday. The many R.D.I.'s who attended the luncheon included Mrs. Astrid Sampe from Stockholm, and Mr. Ernest Race and Mr. John W. Waterer who were this year appointed to the distinction. Sir Ambrose was himself appointed to the distinction of Royal Designer for Industry in 1939.

In replying to Mr. Wells Coates, Master of the Faculty, who had proposed his health, Sir Ambrose referred to his early career as a designer as follows:

The Master in his kind speech did not give me the cue I was expecting. I quite thought he would be apt to picture me as the "industrious apprentice who made good". Actually, of course, it was not a bit like that. I just had an extraordinary run of good luck.

It began at school when I suspect I narrowly escaped being superannuated by getting rather badly damaged in a House match—and so I was taken away, and sent to a tutor's who kept a sort of seaside home for mental and physical crocks.

This you might think was not a very good start—but that was the beginning of my run of good luck for I was soon joined there by my cousin Cecil Brewer who, oddly enough, had been similarly invalided from Clifton. By this happy coincidence I came under his magnetic influence. For the next twenty years he was my closest friend, and to his inspiration in those early days I owe everything in the way of design I may ever have done.

Not more than one or two of you will remember Brewer—only Holden and Fred Taylor, perhaps. A remarkable and lovable personality, and had he lived he would have taken a very high place among the architects of his day. At his early death during the First War he was already known by half a dozen pieces of brilliant work.

To go back to schooldays, I am proud to remember, what I failed to realize at the time, that among my contemporaries at Marlborough were two boys, one of whom became the father and the other uncle, to one of our most distinguished R.D.I.'s—Laurence Irving.

After I left school and had spent six months in France, I served three years' apprenticeship to a rather remarkable man who carried on a cabinet-making business at Warwick, where I was put to the bench and then in the drawing office. I then came back to London and joined the family business. You might think this sort of training was not the most suitable preparation for Tottenham Court Road. But here again I struck lucky. The state of the furniture trade in the early 'nineties was about at its deadliest, and so it offered the easiest possible target for fresh life.

By my close association with Cecil Brewer I was thrown in with a set of young Gray's Inn architects—and through them I met those fervent spirits, Lethaby, Selwyn Image, Voysey, and others of the Art Workers' Guild. I just overlapped William Morris, and I first exhibited at the Arts & Crafts in 1896—the year he died. I had been having some difficulty in getting my furniture made in our own workshops, and here I was again in luck, meeting Ashbee just before he moved his Guild of Handicrafts from that fine old house in Mile End Road out to Chipping Campden as it so happened that his foreman Adams, a splendid craftsman, and a few of the cabinet-makers were unwilling to uproot themselves from London and came to me. These formed the nucleus of my new furniture venture in Tottenham Court Road.

Gleeson White, the first editor of *The Studio*, got interested in what I was trying to do, and when it came to issuing my first catalogue he offered to write a foreword and he got Quennell, the architect, to do the illustrations. It was printed by the Chiswick Press, and attracted some attention at the time as being a departure from the ordinary trade catalogue. This early effort put me in touch with men like Lovat Fraser, Fred Taylor, Paul Woodroffe, Joseph Thorp, Harold Curwen, and others who lent me a hand in similar ways.

All that I have been telling you at such tedious length was going on the 1890s, and the first decade of the present century—fifty years ago. My sole excuse for boring you with this egotistical rigmarole is because I want to bring out how much I have always owed to the friendship and help of you industrial designers, both past and present. What it all sums up to is that without them I should have got nowhere—and I most certainly should not be standing here at this moment.

DEVELOPMENTS IN SOUTHERN RHODESIA

An address by

The Right Honourable SIR GODFREY HUGGINS, *C.H., K.C.M.G.*

Prime Minister of Southern Rhodesia, given at an informal meeting of the Commonwealth Section of the Society, on Thursday, 8th January, 1953 with Sir Selwyn Selwyn-Clarke, K.B.E., C.M.G., M.C., M.D., F.R.C.P., Chairman of the Commonwealth Committee, in the Chair

THE CHAIRMAN: It is the privilege and pleasure of the chairman to introduce the speaker. You will, I know, agree that this would be an act of supererogation on this occasion. For the past twenty years the name of Sir Godfrey Huggins has been a household word in this country and all over the African continent. It is possible, however, that one or two of you in this hall this evening may not be so closely acquainted with Sir Godfrey's career, nor with the very remarkable fact that he has been a Commonwealth Prime Minister for twenty years continuously.

Since Sir Godfrey and I are members of the same profession, it is with understandable pride that I tell you that he qualified at St. Thomas's Hospital in 1906, and took the highest diploma in surgery two years later. After serving as a Resident at his own hospital and later at the equally well-known Hospital for Sick Children in Great Ormond Street, Sir Godfrey migrated to Southern Rhodesia in 1911, where he practised as a general practitioner and surgeon until 1921, from which date he was a consultant surgeon.

He served with distinction in the Royal Army Medical Corps during the First World War in England, Malta and France. He is the author of a learned treatise on the care and after-treatment of amputation stumps, and of many other articles.

From 1923 to 1933 Sir Godfrey was an elected member of the Legislative Assembly of Southern Rhodesia. He became Prime Minister in 1933, and was concurrently Minister for Native Affairs until 1949. In the previous year, in addition to being Prime Minister, he took over the Portfolio of Minister for Defence. His wisdom and outstanding public services have been recognized by many honours, some of which you have seen on the cards sent to you in connection with this meeting.

We are greatly indebted to our former Chairman of Council, Sir Ernest Goodale, for the very happy thought that Sir Godfrey, himself a Fellow of this Society, should be invited to address us. I know you will all share my view that the Commonwealth Section of this Society is receiving an excellent impetus to its activities at the beginning of the New Year by having as its first lecturer one of such distinction and such high attainments as Sir Godfrey.

It is very kind of you, Sir, to spare some of your all too few moments between the Conference on Central African Federation and your departure for Southern Rhodesia. We are looking forward very much to hearing at first hand from you some facts about

the political, economic and social pattern of what might well be described as a particularly important pivotal centre of the Commonwealth at the present time.

Sir Godfrey Huggins then spoke as follows:

THE ADDRESS

I feel it a great honour to have been asked by the Society to address you. I am sorry that, owing to pressure of work, it is possible that what I am going to say may be a bit disjointed. At times I may be rather like a commercial traveller travelling in the interests of Southern Rhodesia; at other times I may bore you with a lot of figures. We shall have to risk all that; and I shall get on to the topic, the title of which has been altered from 'Recent developments' in Southern Rhodesia to just 'Developments'. The reason for that was that the whole thing is so recent. There were no Europeans in that part of Africa until 1890 when the pioneer column landed at Fort Salisbury.

As the Chairman has said, I have been there quite a long time. I must say the place seemed to stand completely still, with an occasional spurt and set-back from time to time, until we really began to go forward in about 1935. As a matter of fact, that change was due to an agreement made by the late Lord Baldwin which more or less stabilized the tobacco market.

Our economy originally was founded on the production of gold. It was the hope of finding vast gold mines that induced the investors of the British South Africa Company to put up the money that Rhodes required for occupying that part of Africa. You know the history: it was during the scramble for Africa. Rhodes got in first in the part of Africa where we live, and we have been there ever since; and I may say, in spite of all that is said about us, we and our descendants intend to remain there; and we believe that by doing so we shall be of great assistance in advancing and helping the indigenous Africans. Perhaps before going on to the main theme, I should point out to you that we have every right to be there. It is a fact that the other people who are there now got there a little bit before we did and massacred all the people who were there before them. When we went there, we did not do that, and that has created our biggest problem to-day.

To give you some idea of the advance which has taken place with regard to development, we can start off, as a good indicator, with the population increase. In 1939 there were 64,000 Europeans. They had increased to 82,000 in 1946; and in 1952 they were 150,000. On the other hand, the Africans, of whom there were estimated to have been about 600,000 when the pioneers went there, in 1939 numbered 1,600,000. In 1946 there were 1,719,000, and, in 1952, roughly 2,000,000. That increase in the African population indicates that what was apparently a dying race is not thriving too badly under European supervision and help. But the important figure there is the increase in Europeans, as they have to provide all the energy, inventive genius and organizing ability.

With regard to this increase in Europeans, we have a very low death rate and we have a very high birth rate, which is also a sign of health and prosperity

in a country, because as a rule the birth rate goes down amongst civilized people when things are not looking too bright. But immigration plays a very big part. In 1939 about 3,000 people migrated into Southern Rhodesia. In 1946, seven years later, 9,100 came in; in 1949, 14,000; and in 1951, over 17,000.

Of course we were beginning to get a little bit of immigration indigestion by that time, because we were only able, before the war, to provide for 64,000 people; and whereas in the old days it was quite easy for populations to move into such a place as Southern Rhodesia since they could just put up grass huts or build mud or wooden huts, and thousands of them could have come in without anybody worrying, in this modern age we have such things as building bye-laws, we have town planning officers (I believe you know of them in this country) and we have medical officers of health; all of whom from time to time, when they seem to upset things, become public enemies. But they are necessary, either as "evils" or as good influences. However, they do restrict very much the rate at which a country can expand in modern times.

Now, these people cannot live on nothing. The national income has increased in proportion to population, or rather more quickly. In 1949 the national income was £73 million, and in 1951 (I have no later figures) it was over £98 million. The people have to trade. Our total imports in 1949 were £54 million, and in 1951 they were £85 million. Our domestic exports in 1949 were £29 million, and in 1951 they were £42 million. This exhibits, of course, a very nice adverse balance of trade. But it has been made up by the fact that a great many of these imports were of capital goods for increasing the wealth of the colony later on; and, furthermore, a good deal of the gap was filled by loan funds.

Our revenue may seem to you a little ridiculous, but to us it is very important. The size of your revenue of course depends on the extent to which you are prepared to tax the people up to the last shilling. On our basis of taxation the revenue in 1949 was nearly £14 million, and in 1952 it was £21 million, which is quite a considerable increase.

Just to consider the thing we have depended on most in the past, mineral production : in 1949 it was £11 million odd, and in 1951 it became £15 million.

Now I come to a very important matter: that is, tobacco. In 1949 we exported nearly 82 million pounds, and in 1951 we exported 88 million pounds. I mention tobacco because it so happens that, although our economy was founded on the export of gold, in the year 1949 tobacco overtook gold as one of our major exports; and it also illustrates to a certain extent the ups and downs of creating an industry in a developing country. (This is now only a matter of historical interest, because it all happened a long time ago.) In 1894 we had one tobacco grower, and he produced 57½ pounds of tobacco which sold for 4*s*. 6*d*. a pound. But matters got more serious in 1910, just about the time I arrived in the colony, and they started auctions. The 1914 crop was 3 million pounds. The auctions collapsed, and most of the farmers were ruined. That was overcome economically because the war broke out and most of them were killed. Then at the end of the war the growing of tobacco started all over again. The crop remained below a million pounds until 1919. In that year imperial preference was introduced

to the extent of one-sixth; and ever since then there has been steady expansion both by sales and by private negotiation between grower and merchant or manufacturer. In 1927–28 the crop was 24 million pounds, which was far too large for any known market, and the growers, the new lot this time, were once more ruined. In 1936 the modern auctions were started. As I told you, in 1935 the late Lord Baldwin made an agreement with the manufacturers over here which enabled a slight quantity of colonial tobacco to be introduced into other brands; and since that we have not looked back, because in 1936–37 we produced 20 million pounds, and in 1951–52 we produced 96½ million pounds. Since 1947, two-thirds of the total crop has come to Britain, and to date that has saved her no less than $150 million in her tobacco purchases.

Well now, you see how things go. Two lots of producers were ruined; then a third lot came in, and those that were any good have done very well.

One of the most striking advances that have been made in the colony since it has become more prosperous and widened its economy is the increase in the well-being and health and happiness of the African population. In Central Africa they are the best paid, best dressed, healthiest and best educated Africans. That is what has happened under responsible government, and it is necessary you should know that.

The other thing that has happened with this influx of population (apart from the development of some other industries which I will mention in a minute) is the growth of towns. It is the same thing that is happening in this country: with millions of acres empty, the people are all tending to go to the towns. And the Africans are going there too. There has been steady progress in municipal services and development; and the most important thing is that some of the smaller towns are now going forward and becoming quite important places.

The nature of the buildings has changed from what it was when I went there—slop bricks and a tin top—to well-made bricks and stone. The bungalow is still quite common; but, on the other hand, in our towns now we have offices and blocks of buildings over ten storeys high. In fact, an aerial picture of Salisbury or Bulawayo looks as if we were trying to emulate New York. Yet there are still some tin shanties left in all these towns. They were built with wood and iron, not even slop bricks.

The other big development that has taken place is the preservation and conservation of land and water. We were among the first to make an advance in this direction, because in Africa, which is a country of extreme seasons—extreme drought or deluge—we lose a great deal of the water that falls during the deluge, and in the process a great deal of the soil is lost too. At the beginning of the war we passed a Natural Resources Act, and under that Act we have been able to do a very considerable amount of water and soil conservation. This extends into the native areas. The only difference between the work in the native areas and in the European is that the taxpayer pays for all the work in the native areas, whereas, although the European farmer can get a subsidy towards this work, the bulk of the expenditure falls on him; and he is liable to be

dispossessed of his farm if he does not do it, if he is ordered to. So at any rate the discrimination there is, if anything, rather against the European.

I think I ought just to mention one or two of the other industries, because they are of great importance to you as well as to us. We have immense deposits of chrome ore, which should be earning a great many more dollars for the sterling group now. We have millions of tons at the siding, but we have been waiting for the United Kingdom to deliver about seventy locomotives to enable this chrome to be moved to the coast. I am pleased to say that after about three and a half years these locomotives are now coming forward. With chrome we are developing what to us is a very important industry, and that is the manufacture of ferro-chrome. To-day our chrome ore in its crude state is trucked to our port, which is in Portuguese territory; it goes to America; it is turned into ferro-chrome; and then you buy it. Now we are going to turn our chrome into ferro-chrome in Southern Rhodesia, and we hope before long to be able to supply you, within the sterling group, with all your requirements.

Now this has another very important effect. In the past I think that one of the criticisms that was possibly fair (there were many that were not) that could be raised against colonialism was this: that the raw materials were taken out of the country and carted overseas for the industries of another country, and in doing that, the price for the raw material was so low that insufficient was left behind to enable the health and educational services of the indigenous and migrant inhabitants to be looked after. Now, of course, as you know, that is wrong, and things are being altered; and with the establishment of secondary industries the living standard of all the people can be raised. This is what I should call a typical example of the sort of thing we should like to do. We have the ore; we will turn it into ferro-chrome; and you will manufacture it. I think that is a very good partnership. The Europeans and the native Africans in our part of the world will both be getting a fair share of that industry. That is what you want to do, and not to move the raw product at a very low price out of the country and then do all the manufacturing processes elsewhere. The case of chrome is quite interesting; little ferro-chrome is made in England, it is nearly all made in America. So we are going to save you dollars there as well.

Another thing of which we have almost unlimited quantities is coal. Coal production is going up pretty rapidly, and it has now beaten the railways again. We are still waiting for these locomotives . . . . You probably hear from time to time that Southern Rhodesia is treating Northern Rhodesia very badly, and that they cannot get enough coal to increase their copper output. They are quite right, they cannot—because we have not got the locomotives to shift all the coal they want. Up to quite recently the colliery was not turning out enough coal. But the colliery is being improved and a new one is being developed; the company responsible—which is registered over here—will have to go to the money market very soon for several millions to enable it to catch up with local requirements. And then after that, at to-day's price of coal, it could export at great profit to itself. But the time is a long way off when we shall be able to spare it. It is interesting to note that the one field which has been opened up is

good metallurgical coal; it is good coking coal which is becoming scarce in the whole world. Therefore we must now try and open up other deposits, to see that this very valuable deposit is not wasted by being burned in locomotives and thermal generating stations for electricity. That is one of the reasons why we are so keen on developing a large hydro-electric scheme on the great Zambesi river.

Another commodity which is of great service to you is asbestos. In 1948 we exported 67,000 tons, and in 1952 86,000 tons; 20 per cent of this went to the dollar area and earned dollars for the sterling group. Now the ore reserves are extremely large, and it is expected that exports will be up to about 121,000 tons in 1956.

During the last war, when we saw that we were going to be short of steel, we took over a little steel works that existed in the colony, because the owners were unable to find sufficient capital to develop a steel works for our iron ore which we possess in large quantities. I must confess that we got in ahead of the Socialists here, but not for the same reason. No money was forthcoming to develop it, and we said we could not possibly do without it, so this became one of these horrible nationally owned things, which has had the usual teething troubles that all nationally owned things are apparently bound to have. But at last it is going ahead, and we are producing quite a nice little tonnage from what people call a pilot plant, which reduces our import bill quite considerably. But the brightest thing of all is that, as far as one is able to judge now, unless the works are sold to a big group with many millions to blow, they should be able to double their output after this year, which would bring it up to 65,000 tons a year, and from then on finance themselves for future slow increases in production. It is only right that this should be done, because the iron ore and limestone which are used are sitting side by side within a few hundred yards of one another; and they are very near a main railway line. It is really rather a unique proposition, and promises very well for the future.

There is a totally different thing I should like to mention now, and that is the growth of cotton. Cotton is rather like tobacco, but it has a more amusing history, because after going through many vicissitudes the Europeans practically got out of the market. The Government, realizing that the reason why people were unwilling to grow cotton was the enormous fluctuation of price on the Liverpool Exchange, which the growers could not stand, and knowing the very large market for cotton goods in Africa, decided that we should spin ourselves to try and stabilize the price and get people into the industry again. So we have now a government spinning works, and the textile mills are privately owned; everybody gets a fair share, and there is no monopoly.

The history of this is interesting. For years we had been trying to develop a cotton plant which was more or less disease resistant and a good cropper. We succeeded in doing that, but nobody would grow it. Last of all we prevailed on our more backward friends, the Africans, to start planting and growing this crop. Now, that was a great ambition, because they cannot eat cotton, and an African does not think much of a crop unless he can eat it. But in the end

we prevailed upon him to grow it, and his profits were so large that the Europeans have rushed back into cotton.

The net result of that is that while in 1945–46 only one million pounds were produced, it is estimated that last year twelve million pounds were produced, and we expect in 1961 to produce thirty million pounds. That means we shall have to export quite a lot once more unless we can find the money to increase our own spindles with a view to increasing the Central African market. But that again shows you the ups and downs of agriculture.

There is another big industry being started by private enterprise and that is wattle pulp. Over twenty-five thousand acres have now been planted with wattle, and it is to be increased to eighty thousand. The production of tannin will commence this year, and it should reach a total of twenty thousand tons within the next two years. The whole of this will be exported. This industry started owing to the disease in Brazil which is upsetting the production of tannin in that part of the world. That again, as you can see, is quite a promising industry, and it is run by private enterprise.

As you know, there are big copper deposits in Northern Rhodesia next to the Belgian Congo copper, but I do not think it will be long before we open some more copper in the southern colony. We had a copper mine which was closed down after the First World War when the bottom fell out of the market; it did not pay to go on with it. But at the present moment there are quite promising deposits in the south-east and in the north-west of the colony.

Another bright spot for the future is that we have a very large deposit of phosphates. That is in the hands of private enterprise at the present time and it will require a great deal of capital to develop it; but it will be of tremendous value to the sterling group and ourselves in particular when it is developed.

Secondary industries have grown out of all recognition, and most of them, I believe, are sound; some of them are not. Boom conditions have more or less existed ever since the last war. You can imagine that this is so, with all these people coming in, and with the demand for goods all over the world; industrial production has risen from £22 million in 1946 to £62 million in 1950, and the net value from £10 million to £29 million; and the number of industrial establishments in that period rose from 524 to 1,024. When I look back and realize that the only secondary industry in the capital, Salisbury, when I went there was a brewery, I think that one realizes that quite considerable progress has been made in recent times.

Now the railways, like yours, are state owned, and for a very different reason, namely that since the company could not raise the necessary capital to develop what was a pioneer line into what became a serviceable one after the war, they had to be bought up. They are doing a very wonderful job of work, because, as I have said, they are very short of locomotives and they have been short of rolling stock; but railways run into big money. They have increased their carrying, with a limited staff and rolling stock, from four million tons in 1946 to over seven and a quarter million tons in 1952, which under the conditions in which they are operating is very good.

The present capital budget of the railways covers only a three-year period, and for that we shall want another £29½ million. We look to this country for capital, when you have got any, because we always have done so ; but recently we have had to turn to other sources, and I must say that we have had excellent assistance from the old E.C.A., as it was called, in a loan of £5 million for the railways, and we have got £10 million from the International Monetary Fund for the development of electrical power; we are hoping to get another £3 or £4 million out of the same sources to build another line to the coast.

Now all the time we have been developing electricity on a very, very large scale. In 1935 we decided to put electricity all over the country for economy, to save the importation of oil and also to preserve the indigenous forests which were being cut down to be burnt in boilers. To-day we have a network covering a very wide area, and really I think your farmers in England would be quite jealous if they saw that farms as far as five or six miles apart are on the grid, while your little farms here, next door to one another in some areas, have not got as far as that yet. We started this in 1935; it has been a great development, a great economy, and a great success.

I should like just to say one word on one other subject, although this is not a trade meeting. One of the things that prevents a certain amount of trade between my country and yours is the way you handle your business. You do not separate Southern Rhodesia from the Union of South Africa, and you do not have your manufacturers' agents in Southern Rhodesia; at least some of you do, but a great many do not.

Now here is a classical example, and I hope it is very exceptional. Recently a firm over here was asked why they were not represented in Southern Rhodesia. They said, "We are, we have a business covering Southern Rhodesia and all the rest of Africa". We asked where their various offices were, and we found they had one office only, in Sierra Leone!

That is not the way to do business. We want to trade with you and we want you to trade with us, but ordinary business methods must be introduced or no profit can be expected for anyone.

DISCUSSION

THE CHAIRMAN: I think you will agree with me that we have had a very vivid picture from Sir Godfrey of the remarkable developments that have taken place in Southern Rhodesia in the forty-two years since he first went out there. From his inimitable way of being able to introduce humour into statistics, one impression has been left in my mind, which is that the hazards of living or of earning one's living in Rhodesia are almost as great as they are in Piccadilly.

I was very much interested in Sir Godfrey's story of the Africans who led the way in the planting of cotton, which is now a thriving industry. It brings back to me the amazingly receptive quality of mind of the Gold Coast Africans with whom I worked some thirty-odd years ago.

PROFESSOR DUDLEY STAMP, C.B.E., D.LIT., D.SC. (A member of Council of the Society): I have listened with very great pleasure to the brief but extraordinarily informative account of Southern Rhodesia. There is one subject which perhaps might be touched upon a little more: the supply of water. Water is one of the great problems

in so many parts of Africa. What is the position of water supplies in Southern Rhodesia?

THE LECTURER: In recent years we have been making great efforts to conserve the rainfall, both in small and large schemes. As you know, large schemes cost a great deal of money, and we have to find a lot of capital for them. That again illustrates one of the difficulties in dealing with Africa, because I always say that in spite of everything, she is still really savage, and if you do the wrong thing she will bite you. The Government built a big rock-filled earth dam on a river about eighteen miles from Salisbury to enable the municipality to get an extra supply of water which would last for very many years. One half of the water this supplied was supposed to be for irrigation. It was estimated by all the engineers that that dam would take two years to fill. Last year before the spillway had been built it filled in six weeks. We managed to save it by a very fine engineering effort, but that is the sort of thing that happens in Africa.

We are, however, building, gradually, a large number of small dams; the farmers themselves are building them. If you fly over the country, you now see a mass of little pools—you would not have seen one a few years ago. We want the little pools to fill the big ones later on.

There is one tremendous scheme in the offing, if we can raise the money for it. That is the dam on the Zambesi, which will be a wall about 300 feet high, and will create a lake 150 miles long and 80 miles wide. It will be much bigger than the Boulder Dam. When the scheme is completed, it should produce about 1,000,000 kw. of energy, and it is estimated that it could be delivered at about a farthing a unit.

MR. E. M. RICH, C.B.E., F.C.G.I., B.SC. (A Vice-President of the Society): Would Sir Godfrey tell us something about the development of education in Southern Rhodesia?

THE LECTURER: Education is one of those matters which is divided into groups, which is of course one of the reasons why we in Southern Rhodesia are not considered quite so civilized as people in some other parts. That is to say, we have European education, we have Indian and coloured, and we have African education.

As far as European education is concerned, it is probably the best in the Empire. That results from the fact that it started in the days when the British South Africa Company were administering the territory, and they had to build schools and have teachers of a high standard for the children of their civil servants. We have carried on that tradition ever since. Every European child under our Education Act is obliged to go to a secondary school. It is not a question of seeking for entry; they are obliged to go there. So the Europeans up to that standard are very well catered for. We are hoping this year that when the Queen Mother comes out for the Rhodes Centenary, she will lay the foundation stone of a proposed university which is to be established just outside Salisbury.

As far as the Africans are concerned, they are very largely educated by the Missions, who get very big grants from the Government. That is the way we can keep them in order; if their schools are bad we close them—that is, we do not have to go and close them, we just withdraw the grant. Most of the native education is done that way. But there are two government schools of a semi-industrial type. There is only one secondary school. That was started during the last war and has been in use now for about five or six years. It is co-educational; there are native girls there as well as boys. Of course it will only be one of the many that we have still got to build. But I would point out to you that most of this money for all these purposes has to be found by the European taxpayer, and we have not really done a bad job in going as far as we have, when you consider that in addition to these expenses we had to buy our constitution. We paid £2 million for that when we started—we are the only part of the Empire that did that; but we had to pay the British South Africa Company £2 million before we

could get our constitution. That was only sixty-three years ago; granted it is still very backward but in recent years we have certainly not stinted the money for native education.

To consider the Indians and coloured people: the Indians are disgraceful. They have not produced a single teacher of their own; they make too much money in trade. We have to go to India and import teachers for them, which I think is very bad. The 'coloured' people I regard as the most depressed classes in the colony. They are nobody's child, you see; the natives do not want them and the Europeans are not perhaps as kindly disposed to them as they might be. Their education is only just beginning to be treated seriously. We are building a secondary school and a boarding school for the coloured people now.

Our education on the whole is fairly liberal in so far as we do not try to ram every child through a Matriculation barrel. We have a modern type of education as well as that type; and there is no reason why Europeans should fear competition from anybody else, as long as they take advantage of the education that is provided for them, and which is free, except for boarding fees which come to about a third of the cost to the State of keeping a child at its expense. We go farther than that, and I believe we have beaten you in this. An indigent child at a government boarding school gets pocket money and tooth-brushes and everything else, and there are no distinctions made.

MR. ARTHUR GRAHAM KIDD: Sir Godfrey passed severe criticism upon the mishandling by business men over here of trade generally as regards Southern Rhodesia and South Africa. Have these facts been prominently brought forward before the authorities over here, so that matters may be improved?

A second question which I should like to ask is this: Northern Rhodesia was mentioned occasionally during Sir Godfrey's address, and I should like to know if the relations between Southern and Northern Rhodesia are improving.

THE LECTURER: Yes, these things are represented from time to time. You have a Trade Commission out there, and you have a High Commissioner. Probably we are a little bit more sensitive about it than we need be, because we hate the suggestion at any time that we are a sort of dependency of the Union of South Africa, and the tendency is to appoint agents there and not in Southern Rhodesia. That is gradually improving. Of course, to a certain extent it makes it more expensive for us, because the agent in the Union gets his rake-off and the sub-agent in Southern Rhodesia gets his also.

Our relations with Northern Rhodesia are quite good; but there is the usual stickiness and delay that occurs between any two governments when anything has to be done. That is one of the reasons why I want to get rid of the two governments and have one only.

We get on very well with them, and we do everything we can to help them. I cannot resist telling you an amusing story. I was up in the copper belt about a year or eighteen months ago, when this talk of joining up with Northern Rhodesia was coming to the fore, and there was a suggestion up there that we only wanted them for their money. I pointed out to them that it was twenty-eight years since I attended the first meeting of elected members of the two countries with a view to getting the two countries together. And I said, "I will point out further that when I first took office as Prime Minister you were so broke that I lent you civil servants and educated your children for nothing. And now because you are rich, I still like you."

MR. GORDON RUSSELL, C.B.E., M.C., R.D.I. (A Member of Council of the Society): Can Sir Godfrey tell us anything about the Rhodes Centenary Exhibition that is being arranged?

THE LECTURER: The exhibition is being held, of course, in honour of the centenary

of the birth of Rhodes. It is going to be on quite a large scale for a small country. It is largely based on an industrial exhibition, and most of the countries of Africa south of the Sahara are exhibiting there. The Union of South Africa will be there, and Madagascar. Northern Rhodesia has combined with us to put up the money for it, and Nyasaland has been associated with it although she is not in a position to put up any money. Nyasaland is really the poor relation in Africa, but she is our near neighbour, and a tremendous number of her citizens (not citizens, they are 'protected subjects,' I must be particular!) come down and work in Southern Rhodesia. We were only too pleased to get her to associate herself with the Exhibition. It is essentially a show-off of the various countries who have got anything to show. Of course, we expect to astound them all with what we are producing.

MR. H. S. O. WOOD: Sir Godfrey was talking about a second railway line to the coast. Is that to Beira?

THE LECTURER: The second railway line to the coast is going out to Lourenço Marques. There has been a lot of talk as to why we are doing that. But we thought that it might be rather offensive to our southern neighbours if we did not link up with them in another place. So we got American engineers and economists out to examine all the possible routes, and fortunately they chose this one. I say fortunately, because if we put in another link to the Union, the big haul would be on the South African railway and the short haul in Southern Rhodesia, whereas we are making about £800,000 a year on the long haul to the Union at the present time. But it is definite that, with the alterations that have to be made to the various permanent ways and so forth, and the prospect of having to buy rolling stock for the different routes, from an economic angle this is the soundest thing to do.

There is one more reason. Lourenço Marques is one of the best ports I know of. It has never been used to capacity, and it is capable of great expansion; moreover our friends in the Union, whenever they get really busy, do not seem to have enough port capacity to handle our goods.

MR. G. E. GONIN: May I ask Sir Godfrey whether all these economic developments would be helped very much by Federation if it went through?

THE LECTURER: I can answer that one quite positively. That is one of the chief reasons for Federation. It is supposed to be an economic union primarily. It has been turned into a black and white controversy, which is a little unfortunate, but it is primarily a development proposition. I do not think that there is any hope of raising a fraction of the money we want for development, unless it does come to pass. So many of these schemes, for example anything that happens on the Zambesi, really are common to both territories. The railway was bought by Southern Rhodesia for Northern Rhodesia and Bechuanaland because the Colonial Office would not put up the money. We had to buy it, although Northern Rhodesia is much better off. They are playing the game very handsomely and they are raising loans too. But there are so many of these things that are combined interests.

Again, our American friends like big things; I believe most people do if they have got money to invest, and there is a much better chance of interesting them in the development of Central Africa as one territory than there would be of getting them really interested in a small and unimportant unit of what might otherwise be a big Federation.

THE CHAIRMAN: I am sure you would wish me to express, on your behalf, our very grateful thanks to Sir Godfrey, not only for his lecture but for the masterly way in which he has dealt with the various questions. We are most grateful to him for giving up his time to come and give us this very able and extremely interesting address.

The vote of thanks was carried with acclamation and the meeting then ended.

THE ASSESSMENT OF SUITABILITY FOR EMPLOYMENT

A paper by

C. B. FRISBY, Ph.D., B. Com.

Director, National Institute of Industrial Psychology,
read to the Society on Wednesday, 4th March, 1953,
with D. W. Harding, M.A., Professor of Psychology
in the University of London, in the Chair

THE CHAIRMAN: The topic of the paper to-day, "The Assessment of Suitability for Employment", concerns one of the oldest of human undertakings. Ever since it has been possible to choose a partner in an enterprise, buy a slave, or take an apprentice, people have always been faced with the problem of choosing the right one. It is such an old problem that when the psychologist comes on the scene offering technical help, he is coming very late on a scene of human endeavour and, to a large extent, of human disappointment. Not unnaturally, therefore, he must expect to face a good deal of scepticism. If the psychologist had been offering some panacea; if he had produced a box of tricks or a box of tests and suggested that he was going to settle once and for all the problems which had so exercised people in the past; if, in particular, he had suggested he was going to make unnecessary the experience and intuitive judgment on which people have ordinarily depended in selecting others for employment, then he would have deserved the most relentless scepticism. In fact, he never did say anything of the sort. If there should be a suspicion—a lingering suspicion—that psychology makes claims of that kind, I am sure that we can rely on our speaker to-day, Dr. Frisby, to dispel that.

Dr. Frisby is Director of the National Institute of Industrial Psychology, which was established in 1921. The Institute has been in the forefront of this work for more than thirty years. It has had to survive criticism and scrutiny from two different directions. On the one hand, it has kept in close relation with the universities and the academic psychologists and has had to support the criticism that they bring to bear on the scientific validity of its work. On the other hand, it has had to meet a different kind of criticism from industrialists who have paid fees for help in their employment problems, and from parents who have paid fees for the guidance of their children as to the occupations they should take up. In both those cases criticism, directed by very practical standards, has been the lot of the Institute. It is true to say not only that it has survived these kinds of criticism, but that its prestige and repute in both fields is greater now than it ever has been. Incidentally, it is worth noticing that the Institute has been a training ground for men and women, many of whom have gone into responsible positions in industry and the universities.

The following paper was then read:

THE PAPER

The beginnings of psychology as a science can be found in the work of the experimental psychologists at the end of the last century. Much of their work

dealt with the measurement of different kinds of performance, and it demonstrated the great variability among human beings in practically every attribute that could be measured. To state that people differ one from another in respect of attitudes, abilities, disposition and interests now seems a rather fatuous truism. But it was common in the past and is still not unknown for assumptions to be made that differences between men's behaviour should be attributed solely to differences in their character. Thus the successful business man was held up as an example of results which flow from the sterling qualities of diligence and perseverance expressed in long hours and strict attention to duty, without any reference being made to the fact that he might be endowed with intellectual powers much above the ordinary.

How far the differences in attitudes, abilities and disposition must be ascribed to innate factors, how far, that is, we are the product of our genes, and how far environment affects our development, both on the cognitive and on the character sides, is of course still very uncertain, but that is not a subject for discussion to-day.

For the occupational psychologist the assessment of attitudes, abilities and disposition is an extremely important matter. The problem which he constantly encounters is that of forecasting the suitability of an individual for some particular job or kind of work. The individual's success is largely determined by the extent to which his qualities of body, mind and temperament conform to those which the job calls for, if it is to be satisfactorily carried out. Matching people and jobs can play a large part in ensuring the adjustment of the individual to his working life. The man employed on a task which calls for only a fraction of his powers not only represents a great waste of ability in the service of the community; he usually becomes a frustrated and embittered individual. On the other hand, one who struggles to carry out tasks which are really beyond his capacity is not only inefficient, but is involved in the risk of a breakdown or at least dismissal.

The psychologist's particular contribution to vocational guidance (that is, the giving of advice to people as to the type of career in which they are most likely to achieve satisfaction and success), and to selection and allocation (that is, the procedures of choosing people to fill particular vacancies) has been principally through the development of systematic procedures. Scientific vocational guidance and scientific selection are terms to be deprecated in our present state of knowledge. The psychologist advocates the use of systematic procedures in which scientific methods can play a part. The point is illustrated by consideration of the need to *organize* the collection of information about both people and jobs, information which is necessary before judgment based on anything but guess-work can be made about the individual's suitability for any particular task. One method of organizing this information which has been used by the National Institute of Industrial Psychology for many years, and has become known as the N.I.I.P. Seven Point Plan, demands the use of seven headings: physical make-up, attainments, general intelligence, special aptitudes, interests, disposition and circumstances. This framework has proved very

convenient in marshalling information about the demands of jobs, as well as on the nature of people who propose to fill them. The kind of points considered under the different headings are as follows:

Physical Make-up. Are there any aspects of his health or physique which are of importance in connection with the job? What impressions does he make by his appearance, bearing and speech?

Attainments. What are the details of his education? How successful has he been at school and university? Has he had any vocational training or occupational experience? How well has he done in the jobs he has had so far?

General Intelligence. What is his level of general mental ability? How well can he deal with novel situations and how effectively does he use his intelligence?

Special Aptitudes. Does he show any marked aptitude towards mechanical things or the use of his hands, or towards artistic execution or appreciation, or in the use of words or figures?

Interests. How far can his interests be described as social, intellectual, artistic, practical, or active?

Disposition. Is he stable and dependable, and does he show initiative? Is he likely to be easily acceptable to other people or to be able to obtain a position of influence over them?

Circumstances. What is his family background? What are his social and economic standards?

Success in forecasting occupational suitability depends firstly on the amount and accuracy of the information amassed about the individual and the job, and secondly on skill in interpreting this information. This framework has been found extremely useful as a means of organizing the information which is obtained from various sources—application forms, testimonials, school reports, tests, interviews, group procedures.

Application forms, or biographical inventories, usually require the person to provide a summary of his education and training, and of his work and health records; they often invite him to give information about his interests and leisure pursuits, and his reasons for wanting to undertake a particular kind of work. In some cases experience shows that certain responses to some of the questions asked bear directly upon success in the job. But usually the *questionnaire* serves to save time at the interview, by obtaining a good deal of straight, factual material in advance, and to give the interviewer points to guide him.

Testimonials are regarded by the psychologist with some suspicion as unreliable documents except in rather special cases, important for what they leave out rather than for what they say. The most satisfactory kind is the reference sought by an employer which asks a few direct questions and concludes with an inquiry whether the referee would employ the person himself. School reports may frequently provide useful information, particularly when considered in the light of the person's performance at certain psychological tests.

It is commonly thought that it is the use of tests which distinguishes the psychologist's work in the appraisal of the individual. But tests are in fact only

one of the tools of assessment, and, as normally used in this country, cover only two of the seven points, namely General Intelligence and Special Aptitudes, though occasionally tests of attainments can be of service. In the United States, tests of interests and disposition are widely used; to them I shall refer later. Here we rely on the interview as the main means of assessing interests and disposition, although sometimes we use procedures in which a group of people are asked to discuss some topic or undertake a task.

The kind of tests one uses to measure ability, and the means one employs for the study of disposition depend on the theory of the structure of human abilities and of the nature of personality which one holds. Everyday language still makes use of terms like memory, imagination or intellect. A is said to be notable for his wonderful memory and B for his lack of imagination. The early literature on psychology contains a great deal of discussion about such faculties, as they were termed. The faculty theory of psychology became discredited when the experimentalists were able to demonstrate that things like memory and imagination were not in fact unitary traits—that one might have an excellent memory for faces and a very poor memory for names. In place of the faculty theory, other theories appeared, theories of the structure of human abilities and theories of the nature of personality. Although personality must be regarded as a whole, it is convenient, particularly when assessing people's suitability for different kinds of work, to think of them in terms of their ability: "How able a person is he?", and in terms of personality (to use the word in the popular sense): "What kind of a person is he?"

Under the heading of "How able is he?" we can consider the quetion of the structure of abilities, and under the heading of "What kind of a person is he?" we can consider the nature of personality. There are two main thesories of the structure of abilities. One, sponsored particularly by the American psychologist Thurstone, postulates a number of primary mental abilities. Thurstone names eight; other American psychologists have raised the number to sixteen or twenty. Each of these abilities is held to be an independent trait.

The theory which is commonly followed by psychologists in this country is the hierarchical theory, which is associated with the names of Burt and Vernon, although its roots go back to the original work of Spearman, who in 1902 was the first to apply statistical procedures with the express purpose of throwing light on the nature of mental ability. He demonstrated that in any kind of mental work there could be recognized two factors:

(i) The general factor which he called *g*, which entered into all mental work, and which he suggested might be considered as an equivalent of energy on the physical side.

(ii) Some factor specific to the particular work.

At a later stage his students brought to light the third kind of factor, the group factor, which enters into a number of different tasks. Our present theory may, therefore, be said to stem from Spearman's work. Here we have a conception of a general factor—Spearman's *g*—entering into all mental ability at the apex of a pyramid. Below it come certain group factors, two clusters

at present being recognized, one the spatial, mechanical, practical cluster, and the other the verbal, educational cluster. Each of these clusters is a complex which further research may be able to break up into separate group factors. At the third level come specific factors; abilities, that is, specific to a particular task or situation.

If you hold the theory of primary mental abilities, you will naturally want to use tests for all these abilities when you are concerned with vocational guidance, and for such of them as may appear to be important in any particular job when you are seeking to select people for that job. You will, therefore, tend to use a fair number of tests. If you hold the opposing theory, you will use far fewer tests. You will be particularly concerned in both vocational guidance and selection to obtain a good measure of the individual's native endowment with the general factor. In vocational guidance you will probably be content to add other tests which give measures of the two complex group factors. In vocational selection you may well give less time to tests of the group factors and more to what are called 'analogous' or 'work sample' tests, which may be expected to reflect specific factors to a greater degree. An analogous or work sample test is a task constructed to resemble the job very closely, so that it may call for the same abilities as the job itself. This is the theory of the analogous test, but in every case it has to be proved that this is in fact the situation. For, although your theory will guide you in the type of tests which you use to measure the abilities of your subject, whether he be one who is seeking your advice, or one who is applying for a job, the value of those tests has to be demonstrated in practice and until a test has been shown to be a practical aid in guidance or selection procedure it should be used only experimentally.

The practitioner in vocational guidance and vocational selection can very rightly say that he is not concerned to know precisely the nature of the abilities which certain kinds of work demand and certain tests measure, if he knows that there is a sufficiently close relationship between performance at those tests and performance at the job itself. For the designer of tests and for him who uses tests primarily as a research tool to throw light on the nature of human abilities, the position is, of course, very different. The test designer is either concerned to produce a test which will measure the same abilities as have been measured by another test, or he is seeking to produce a test to measure some ability or combination of abilities for which he has no satisfactory test. He therefore wants to know what he is testing, and the principal tool which he uses to help him is a statistical procedure known as factor analysis. This procedure makes it possible to see how far a test is measuring the same thing as other tests, and how far it is measuring something different. The test designer usually prefers to use letters to identify what his tests are measuring, rather than the names of abilities. Thus he talks of *g* rather than general intelligence, of *k* rather then spatial perception of *v* rather than verbal ability, and so on. One might describe a factor as a statistical entity; whether it has any psychological meaning depends on whether the factor can be identified with a particular kind of behaviour to suggest the existence of a trait.

Factor analysis is not the only statistical procedure which enters into the construction of psychological tests. A first requirement of any test is that it should be reliable. By this is meant that the part played by chance in determining the score of any individual shall be kept down to a modest level. The reliability of a test can be calculated in two ways. Firstly, one may compare the performance of a group of individuals at the same test with a suitable interval of time between two administrations of the test. If the reliability of the test is satisfactorily high, the ranking of the group of individuals based on their scores should change very little from one administration to another. The second method is to compare, again with a group of individuals, the scores made on one half of the test with the scores made on the other half. It is usual to divide the test into two halves by taking alternate questions. The reliability of a test reflects the skill and the labour of the test designer; high reliability is a first requirement in any test, an unreliable test is about as much use as an elastic tape measure.

It is not enough that a test should be reliable if it is to be of practical value. It must also be valid. By this is meant that the test shall in fact measure what it sets out to measure. As I said earlier, factor analysis is used to show how far a test is measuring the same thing that is measured by another test, which it is designed to duplicate. This is one way of estimating the validity of a new test. But in the practical situation which faces the vocational adviser and the psychologist who is selecting and allocating people for particular jobs, validity can best be thought of as the answer to the question : how far does performance at this test forecast later performance at a particular kind of work or a particular job? This means that a great deal of experimental work is necessary before the validity of a test can be determined and its usefulness proved.

Yet another stage in test construction is standardization. A test score is only meaningful if we can relate it to the scores obtained by a representative sample of people of the age and education for whom the test is designed, which means that a great many people have to be tested before a new test can be given a scale of norms.

Tests are conveniently classifiable into those which employ only paper and pencil, and those which involve the use of apparatus. A second classification which gives very similar, though not precisely the same results is that of group tests and others. Group tests are tests which can be given to a number of people simultaneously by one test administrator. Other tests are those which have to be given to the subject individually by the administrator.

Tests, then, help us to answer the question, "How able a person is this individual?", but they should not be regarded as the sole means to be used. Information about the achievements of the person at school and university, at work and play, all throw light on the nature of his abilities as they are revealed in his day-to-day activities. A comparison between his achievements and his test results may suggest that he has greater potential ability than he has hitherto made use of, in which case the reason must be investigated, or that his achievements up to date have been very much in line with what would be expected from his test performances. Occasionally his achievements seem to have been very much better than would have been anticipated on the basis of the tests, and here

again, investigation is needed to permit a judgment to be formed as to whether test scores should be regarded with suspicion in this case, or whether his success is to be attributed to qualities of disposition rather than to ability.

When we come to consider the question "What kind of a person is he ?", our procedure will again be affected by our theory, and theories of personality are legion; not quite as numerous perhaps as the definitions—someone has traced over a hundred—but far too many to be discussed now, although I will mention the main kinds. There is, for example, a series of contrasting type theories such as the cyclothyme—schizothyme, with its associated body types the pyknic and asthenic; there is the extravert-introvert, the masculine-feminine, the dominant-submissive, and so on. Another series identifies certain main characteristics and defines the total temperament in terms of these parameters. One such system uses the terms hysteroid, manic, depressive, autistic, paranoid, epileptoid and normal. A third type of theory is based on research similar to that which has explored mental abilities, using factor analysis techniques. Curiously enough, American work in this field, as in the case of abilities, has tended to produce theories of a relatively large number of personality traits, while work in this country has been interpreted as suggesting a general factor of emotionality with possible group and specific factors in a hierarchical order.

Perhaps the immediate consequence of a particular theory held by a psychologist is seen in the extent to which he uses tests for assessing qualities of temperament. In this country up to date relatively little use has been made of temperamental tests in the field of vocational guidance and vocational selection. In the United States one finds a very different situation, in that pencil and paper tests of personality are very widely used in both guidance and selection. There are, for example, the Humm Wadsworth test, which is based on the seven-fold analysis of temperament to which I have already referred—hysteroid, manic, depressive, autistic, paranoid, epileptoid and normal—the Minnesota Multiphasic Personality Inventory, the Bernreuter scale, and others. Each of these tests gives a series of measures in terms of the components of temperament in accordance with which it has been designed. The reason why British psychologists have made little use of this kind of test in practical work is, largely, that most of them take a considerable time to administer and to score and interpret, and over here we very rarely have as much time as we should like for assessing people in relation to their future employment. We have felt, therefore, that the amount of information which these tests can add to our knowledge of the individual is not sufficient to warrant the large demands which they make on the total time allowed for the procedure.

Most of us, too, have serious doubts about the value of these questionnaires in a selection situation. Although the person seeking vocational advice may be, and normally is, only too willing to give all possible information to his adviser, the person applying for a job is naturally concerned to put the best face on himself. One would expect, therefore, a tendency for the applicant to fill in a personality inventory in a way which he hoped would present him in the most favourable light. It is true that one scale at least provides for this assumption in

its scoring and makes it possible, according to the designer of the test, to recognize cheating of this sort, and even to evaluate it. The results of a small experiment undertaken in an American University not very long ago were those which I think would be expected over here. An experimental group of students were given two pencil and paper tests of temperament and were asked to complete these, imagining themselves to be applicants for a job as salesman in a large industrial organization. A month later they were asked to fill in the forms once more, this time imagining that they were applicants for a job as librarian in a small town. When the forms were examined, there was a marked and significant shift in the personality pattern suggested by the results, so that each individual in the experimental group had contrived to appear as two different individuals.

There is another variety of temperament tests which are known as projective tests. These consist of presenting the subject with an ill-defined situation which he is asked to interpret. Experiments have shown tendencies for certain kinds of interpretation to appear and for these to be related to personality patterns as assessed by other means. Perhaps I should say in an aside at this point that establishing the validity of any test of temperament is an extraordinarily difficult business, since there is no absolute criterion which can be used. The most common method is to administer the test to groups of psychiatric patients who have been diagnosed as a result of thorough observation in mental hospitals over a period, and to groups of people who have not yet given any evidence of abnormality in conduct, and who are therefore presumed to be not abnormal.

Two of the best known projective tests are the Rorschach and Murray's Thematic Apperception Test. The Rorschach test has been very widely used both on the continent and in the United States, although to a lesser extent in this country. It consists of a series of ink blots which are presented to the subject, who is asked to describe the impression which the blots create for him. The test has been used mainly in the field of clinical psychology and no great successes for it have been claimed in vocational guidance and vocational selection. The procedure takes a very long time and requires a very high degree of skill and experience in the operator. The T.A.T. consists of a series of pictures drawn in a rather blurred or sketchy fashion, each of which presents a situation which is open to several interpretations. The subject is asked to write a brief story suggested to him by each picture. His responses are evaluated in accordance with the procedure laid down by the designer of the test. It is possible that the projective type of test may prove to be of particular value in the future, provided quicker and more objective methods of assessing the results can be arrived at.

The tests which have been used in the research on the structure of temperament have as yet been used on only a very few occasions in vocational guidance and vocational selection problems. Four of them have, however, shown promise in connection with the selection of student nurses, for example.

If in this country psychologists do not make very much use of tests for the assessment of disposition in connection with vocational guidance and vocational selection, how do they arrive at their assessments? The interview is still the central part of guidance and selection procedures, and it is used to provide

evidence of dispositional qualities. An interview supported by the information provided by the subject in an application form or biographical inventory enables one to review the educational and work history of the individual, to discuss with him what he has done in the past and how well he thinks he has done it, and to observe not only his appearance and manner but his attitudes towards his work, his superiors, his subordinates and to life in general. Another method which has been used in recent years, and which in this country originated with the War Office Selection Boards which dealt with the recruitment of officers, is that of group procedures. The essential idea behind the group procedure is that if one has a number of individuals—between six and ten is usually found most convenient—in a group to discuss a topic, solve a problem or carry out a practical exercise, one can gain additional information about them. One can see them in action, so to speak, and observe such things as the influence each has over the rest, his acceptability to them and his social skill.

What sort of qualities does the psychologist look for during his interviews and during the group procedures? To some extent, of course, this depends on the requirements of the job in terms of disposition; but although he may give greater attention to certain aspects of the individual in some cases, he will always endeavour to get a rounded picture. The interviewer's aim has been aptly described by Oldfield as the building up in his mind of a homunculus representing the individual, which he can mentally put into situations in which the individual would be likely to find himself, if he followed the particular employment, and endeavour to forecast its behaviour. This is how the vocational psychologist in this country prefers to think of qualities of disposition. He thinks in terms of: "What would this man do if faced with a situation like this?" rather than "Does he possess perseverance, tact, sociability, sympathy, etc.," for the list of such qualities can be prolonged almost indefinitely. But since he cannot do entirely without nouns, he limits himself to a small number, and it has been found that from the point of view of assessing suitability for work, a few normally suffice. They are: acceptability to others, influence over others, steadiness and initiative.

Interests are an extremely important factor in the individual's adjustment to his work, and the vocational psychologist gives due weight to them. It does not need to be stressed that we are more likely to be satisfied and efficient in a job which appeals to our interests, than in one in which these find no outlet. On the other hand, it does not always follow that interest in a certain kind of work indicates sufficient aptitude for it to ensure success. There are plenty of people who derive a great deal of satisfaction from painting, or acting, or writing, or carpentry, for example, in their leisure, whose skill is not sufficient to permit them to make a career of their hobby.

The psychologist finds it convenient to classify interests into broad categories; the N.I.I.P. uses the terms intellectual, artistic, social, practical-constructive and physically-active. It is not difficult to decide what main kind of interest a job offers; it is rather more difficult to assess the interests of the individual. With young people particularly, interests are often fleeting, aroused by some recent

event. For example, the boy who has just been given a camera will tend to display a passionate interest in photography. Some, too, profess a keen interest in so many things that it is obviously impossible for all these interests to be soundly based. The best way of investigating the reality of an expressed interest is to discover how much knowledge the individual has of the subject in question. If an interest is a real one, the person will have studied the subject and acquired a good grasp of it. The boy who is really interested in photography, for example, will know the names of the famous makers of cameras and components and chemicals used in developing, fixing, reducing and intensifying. He will be able to tell us something about speed and grain of film, of lighting problems, and of composition and balance of a picture. If he turns out to be ignorant on such matters, one can feel confident that his expressed interest has little foundation.

Interests, then, can be conveniently assessed by considering how the individual spends his leisure, and the depth of knowledge he shows about these activities. There are tests for interests, some of which approach the question from the angle of knowledge, and some by inviting the subject to record his interests, or his preferences, from a large number of pairs of alternatives. This second type of test is validated, for occupational purposes, by administering it to groups of men and women who are judged successful in various occupations and establishing the patterns of responses which distinguish the different groups. Interest Inventories and Preference Records, though extensively used in the United States, have not found much favour here in selection procedures, for much the same reasons as those which have restricted the use of personality questionnaires. We prefer to rely on the application form or biographical inventory, which usually invites the individual to offer information on his interests, and on the interview when his replies to these questions can be followed up, and the depth and reality of expressed interests assessed.

The last of the N.I.I.P. Seven Points is Circumstances. Under this heading one considers in vocational guidance such matters as the availability of finance for a university or professional training and the existence of any special openings accessible because of the influence of friends or family. In both guidance and selection account must be taken of the socio-economic background of the person, which will colour his expectations about his work; and there are many ancillary points about a job which must not be overlooked: whether, for example, its location is such that the man will be able to continue a cherished hobby in his leisure time—one which calls for facilities not found everywhere.

Matching people and jobs, as I have described the process, calls for the amassing of a great deal of information in a systematic way. It will not surprise you, therefore, that the psychologist shows a considerable scepticism towards those he meets from time to time who have remarkable confidence in their capacity for arriving at correct decisions of this kind in a very short time, and with a minimum of evidence. But, if he is wise, he does not deny the existence of people with a flair for making correct judgments of this kind. For when all is said and done, when he has collected all his information, the psychologist can only make a forecast of the suitability of the person for the job, and the success

of his forecast depends on his judgment. This judgment he must base on a careful weighing of the evidence—rarely will it all point in the same direction—guiding himself by past experience. Although he prefers to call his procedures systematic rather than scientific, his approach is scientific, in that he is always seeking to evaluate his methods, to discover the accuracy of his judgments by following up the careers of those he advises or selects, so that he may learn both from his successes and from his failures.

DISCUSSION

THE CHAIRMAN: It seems to me that Mr. Frisby has raised problems that must be of interest to a large number of different people. There are the technical questions of psychology that he has touched on; the practical problems of industry that are looming behind all that he says; the relation between vocational guidance and selection work on the one hand, and the work of the schools and the colleges on the other, and, of course, the broad social problems, of the kind that he mentioned in referring to the difficulty that the child well suited to be a dustman may have if his other circumstances do not seem to point in that direction, which is quite an important social problem. It is one that was solved in various ways, at least temporarily, during the war, when people were able in wartime circumstances to do most humble and interesting work—tinkering about with cars and things like that—although their normal peacetime circumstances would have forbidden it.

The point that I think we must bear in mind is that, as Dr. Frisby has shown very clearly in his paper, all these problems are open to discussion from a perfectly common sense standpoint; although there are technical points involved, they all have to come to the bar of common sense and the ordinary interest of people who are having to cope with practical problems of this kind.

MR. L. LEWIN: I should like to ask Dr. Frisby a question on the subject of validity of tests. There was a case where a hundred people had been selected by the tests, and out of that hundred only two had proved unsuitable and that, apparently, not for reasons connected with the tests. It would appear that the fact that a large percentage of those accepted by the tests were satisfactory, was taken as a validity criterion of the tests.

Now there is another aspect which is not covered and is obviously not of direct consequence to the employer, and that is the question of those rejected by the tests. There is no indication of the number rejected by the tests and obviously, for that reason, no information about these people who might, in fact, have done well at the job.

THE LECTURER: The speaker has touched on one of the basic difficulties of test validation in the industrial field. Ideally, when one has produced a battery of tests for some particular occupation, one wants those tests to be used experimentally and no action initially to be taken on them in engaging people for a particular job; they should be engaged by the old method. Only in that way can one collect the sort of information one wants for a true evaluation, because one wants, as was rightly implied, successes and failures from the test point of view to get into employment. In the case referred to—it was before the war—the company had very many more applicants for employment than it could possibly engage, and it took the realistic view that, since it was convinced from the preliminary experimental work that the tests were going to be useful, it wanted to make use of them at the earliest stage. But, in fact, there was a small number of people who were engaged contrary to test indication, because of the good impression they made at the interview, and the

works manager, in his report to us, said that these four or five people had all proved unsatisfactory from the point of view of ability. These tests relate only, of course, to ability, they do not give any indication of the interest the man is going to have in the job or his desire to work at the job. I quite agree that those results were almost too good to be true. Normally I am perfectly happy if we can arrive at 85 per cent successful prediction.

MR. R. FIELD (Central Youth Employment Centre): I should like to ask Dr. Frisby what is being done, and how much is being done, to break down jobs or types of employment into something comparable to the detailed analysis of the individual which one tends to make from the tests which have been described this afternoon. The main job of anyone giving vocational guidance is a matching process. We have heard a great deal this afternoon about estimating the potentialities of the individual, and I should like to know whether much is being done on the breakdown of jobs and employment, especially in the broader fields of professional employment, to help a vocational guidance officer to match a child leaving school with suitable employment?

THE LECTURER: In our own vocational guidance work at the Institute we cannot, alas, give advice free, and because a fee is involved, we deal mainly with people who are looking to the professions and higher range of occupations. We have been studying the demands of the professions and these higher level occupations consistently and steadily over the past thirty years. We are constantly trying to add to our knowledge about the requirements for those jobs, and those requirements are changing. For example, the picture which one draws now of the job of the boy who goes into a bank is completely different from the picture which one drew in 1935; the nature of the work inside the bank has changed rapidly over that period. With the jobs of a more manual kind, the factory jobs and so forth, which we deal with in selection investigations, we have to begin by a study of the work; we carry out a detailed examination to decide what the job demands.

There has been no job study programme on a national scale in connection with the vocational guidance service. The Ministry of Labour has published certain basic information and the plan is that the Youth Employment Officers shall be encouraged to study the jobs in their areas, and add to knowledge in that way. There has been a project in progress for the last two years on methods of job analysis by Youth Employment Officers organized in co-operation with Birkbeck College.

In America, in the early 1940s, they began a study of all the jobs known to their Employment Service, and they had a number of job analysis teams, as they called them, which went round industry and studied jobs at a total rate of eight or ten a day. In this way they built up studies of many thousands of jobs.

MR. G. C. S. GREENHEAD: Dr. Frisby has been concentrating this afternoon on vocational selection and guidance, primarily as applied to younger people, or people doing mainly mechanical jobs. I am personally particularly interested in the other end of the scale. I wonder if he could very briefly describe to what degree any sort of psychology or application tests have been, or are likely to be, applied in this country to managerial positions.

Quite recently I met an American who talked a lot about this psychological approach to selecting people for managerial positions. Quite frankly, I was not at all impressed because it seemed to me that while he was trying to impress people that he was applying scientific methods in order to find people for managerial positions, in fact, what basically happened was that those people he chose had already acquired experience in similar jobs which a normally intelligent employer would assess for himself. When you get to executive jobs it seems to me that the value of scientifically

laid down tests—tests in the strict sense of the word, which are largely psychological anyway in those cases—diminishes as you approach the top of the scale, and that the assessment must rest largely in the mind of the employer.

THE LECTURER: Of course, the methods which one can use on this question rather depend on the stage at which you begin. You can, as some companies do, say, "Good heavens, old George is 65 next week and we've got to replace him the day after to-morrow". That, of course, is the most difficult way to select senior executives, but even so, the evidence all suggests that you do better by systematic procedures than by hit-and-miss methods. If you recruit your future executives at a much earlier stage, you will use methods different in detail but with the same aim. I think that the answer is that one must have a plan for replacing senior executives which is in operation many years before those men will actually be appointed; so that the selection of your future executives goes by stages.

Selection, in any case, is really a continuous procedure throughout one's working life. In ensuring a flow of the right men for executive positions extra care must be taken at the re-selection stages at every point, and one has got to associate training with selection. If you deliberately recruit sufficient numbers of young men of high intelligence to be potential managers, if you train those people deliberately, and if you watch their progress and re-select them from time to time at different levels, the problem of selecting executives really ceases to exist. But if you leave it to the last moment, even then I think the psychologist can help you; or even if, as happened after the war, you have to fill gaps by taking in people from outside at the age of thirty-five or forty to fill senior positions in five years' time. One device which psychologists have been using which has been found very valuable is the so-called group procedure; it is valuable because of the additional light it throws on disposition. Although the executive has to have some technical knowledge of the industry in which he is concerned, that is usually the least important quality. He must have good intelligence, and he must be able to lead and control people. This is mainly a question of disposition—of his acceptability to his colleagues and of his influence over his colleagues and subordinates. The group procedure, used by the War Office selection boards during the war, has been adapted for industry with considerable success. Under this method you get, say, eight candidates together as a group and you ask them to discuss something as a group, solve a problem as a group, act as a committee or something of that kind, and the assessors observe their performance as a group. That adds a great deal to the information you can get about the individual at the interview, because you can see him in action with men of his own calibre, and see the influence he obtains over them, the way he makes himself acceptable to them, how soundly he uses his intelligence, and how persuasively he can put forward his views. The group procedure is very useful in executive selection, because the success of the executive does depend so largely on his capacity to work with his colleagues.

MR. D. B. BRIGGS: I should like to ask Dr. Frisby two questions. The first is this: could he suggest what criteria he would employ to decide whether the result of vocational guidance based on tests has, or has not, been successful? Is it enough merely to say that if a man keeps his job or if he is happy in it, then it is an indication of its success, or are there other factors involved?

The second question is: I believe that in the national scheme of vocational guidance in France very considerable emphasis is given to the application of tests of the kind the speaker has been mentioning. In this country I do not think that we apply them extensively, although in some places they have been used. Is there anything we can learn from France from their experience of the type of tests they have been using? Has the process been going on long enough for it to be said that this, that or the other seems to give reasonable results?

THE LECTURER: The first point the questioner raised is the thorny one which plagues psychologists in all their work, and that is, the nature of the criteria by which they evaluate their efforts. The question of what is occupational success is a very difficult one, there is no final or totally satisfactory answer as yet.

What we use, in fact, are criteria such as the degree of satisfaction with his job which the individual himself expresses after he has had experience of it. Another is the degree of satisfaction expressed by the employer with the individual, after he has had experience of him. A further one is the amount of progress he has made with his employment: how far he has been promoted, what salary levels he has reached by comparison with normal recruits to that profession. Another, of course, is job stability —how many job changes has he had and have they always been in an upward direction, rather than here, there or anywhere? Has he changed his job intelligently at his request, or changed it at the request of his previous employers? In these general ways one is able to make some assessment of his occupational success, but no one pretends that we have yet reached a finally satisfactory single criterion. Nevertheless, using these criteria, it is possible to compare the results obtained by different methods of vocational guidance, and the experiments which have been carried out have strongly suggested that the use of psychological methods has led to more successful forecasting of occupational suitability.

The second point was about the organization of vocational guidance in France. L'Institut national d'orientation professionnelle was, I think, established about twenty years ago, as a centre for the training of vocational guidance officers, and it is still training vocational guidance officers on psychological lines. These people, after two years' training, go out and are located in one of the provincial towns, so that in France they are developing, stage by stage, a service of vocational guidance using psychological methods, as and when trained people become available. As a result there is a patchy effect in France, in some areas you find a fully qualified psychologist engaged in vocational guidance, in other areas no psychologist has yet arrived. I think France can be said to be ahead of us in recognizing the potentialities of psychological methods in vocational guidance, but possibly one can see a more complete plan in operation in Australia, particularly New South Wales, where there is a State service of vocational guidance employing a considerable number of psychologists, which makes vocational guidance on psychological lines available to every member of the school population.

THE CHAIRMAN: I am sure there are other points we should like to go on discussing, but I am afraid we must draw to a close, and I know you want me to thank Dr. Frisby for his paper and for the way he has answered the questions.

The vote of thanks was carried with acclamation.

MR. E. MUNRO RUNTZ (Chairman of Council): I should like to propose a vote of thanks to Professor Harding for coming here this afternoon and presiding in the Chair.

I am thankful to say that I am a Victorian, because in those days I was not unduly inconvenienced by any type of intelligence tests. I did, however, at school serve under a head master of undoubted ability and he did not hesitate, when I left school, to sum up my character from the psychological point of view by telling me I was the most unpopular boy that had ever been at his school, that I was a complete failure, and that unless I changed my methods I would be a complete failure in after life. No doubt he was very accurate indeed, but it did not encourage me.

The vote of thanks was carried with acclamation, and the meeting ended.

GENERAL NOTES

ROYAL COLLEGE OF ART EXHIBITION

The Royal College of Art, which was founded in 1837 to foster 'the direct application of the arts to manufacture', and reorganized with that end in view under Mr. Robin Darwin, who became its Principal in 1948, has arranged a Coronation Year Exhibition which is now being shown at the Victoria and Albert Museum. Side by side with the work of a number of the 400 full-time students now training at the College and their instructors, examples of designs by past students who are to-day working in industry have been included with the object of making the exhibition a review of the contribution made by the College to industry during the last three years. The furniture exhibits include models of designs which recently won the first three places in the Furniture Makers' Guild's open competition, of which particulars were published in the *Journal* on 12th December.

The exhibition has been designed by students under the direction of Sir Hugh Casson, R.D.I., and covers the work of the following twelve schools or departments: Stained Glass; Ceramics; Industrial Glass; Textiles; Interior Design; Wood, Metals and Plastics; Silversmithing and Jewellery; Fashion Design; Sculpture; Painting; Graphic Design, and Engraving.

It will remain open until 9th August on weekdays, including Saturdays, from 10 a.m. to 6 p.m., and on Sundays from 2.30 p.m. to 6 p.m.

GRANT FOR RESEARCH INTO TRANSPORT ECONOMICS

Applications are invited for the fifth Rees Jeffreys Studentship, tenable at the London School of Economics, to enable a suitable candidate to devote at least one whole year to full-time research into the Economics of Transport.

The Studentship is not confined to University graduates, but is open to any person who has been engaged in the administration of transport, including road transport, or in the production of transport equipment or facilities. The value of the Studentship will be £250 and it will be tenable as from 1st October, 1953, for one year. Applications must be received by the Registrar, The London School of Economics, Aldwych, W.C.2, not later than 1st September, 1953.

The object of the grant is to promote research "into the economics and means of transport with a view to securing the balanced development of the various forms of transport and the progressive lowering of charges", and any scheme of research likely to further that object will receive due consideration.

OBITUARY

THE DUKE OF WESTMINSTER

We record with regret the death, on the 19th July, of Sir Hugh Richard Arthur Grosvenor, second Duke of Westminster, G.C.V.O., D.S.O., at the age of 74. The Duke of Westminster served on Lord Roberts' staff as an A.D.C. in the South African War, and later was concerned in the resettlement of the Orange River Colony. In the 1914–1918 war he received the D.S.O. for an operation with the armoured squadron, which he led in the Western Desert.

In 1899 he succeeded to his grandfather's dukedom and great estates. In the management of these he showed himself to be a most able administrator and business-man, and an enlightened and popular landlord. His development of his London estates, both in the provision of working-class housing, in particular in Pimlico,

and in such projects as the conversion of the houses in Eaton Square, as well as his schemes of afforestation, the modernization of his farms, and his plans for industrial development overseas, show him to have borne his responsibilities with more than common ability.

He was elected a Fellow of the Society in 1901, and he became a Life Fellow in 1947.

CORRESPONDENCE

THE GRANGE, FULHAM

From *F. E. HANSFORD, 22, RANELAGH AVENUE, LONDON, S.W.6.*

Readers of the *Journal* may be interested to know that a committee has been formed in order to preserve the Grange, North End Crescent, which is one of the very few historic houses left in Fulham. Its associations with Samuel Richardson and Sir Edward Burne-Jones, make it imperative that every effort should be made to secure the preservation of this interesting and gracious house, which is now in dire danger of demolition.

The Grange was built by John (or Justice) Smith in 1713 on the site of an older property, which is mentioned in documents as early as 1669. The two portions of the Grange were originally identical, but the northern portion has undergone certain changes, and the stuccoed front now hides the old and mellow red bricks, while the main entrances to the north and south houses were originally at the side.

The most interesting eighteenth century associations of the Grange are those which link it with the name of Samuel Richardson, the prosperous printer of Salisbury Court and "one of the acutest students of the human heart that ever lived". In 1739 he obtained a lease of the north house in which he resided for the following fifteen years, and here he wrote his three most famous works—*Pamela*, *Clarissa*, and *Sir Charles Grandison*. Here, too, he kept open house, entertaining such eminent men as Dr. Johnson and William Hogarth.

In 1754 Richardson was installed as Master of the Stationers' Company, and towards the end of the same year he removed to a villa, reputed to have been the dower house of Queen Katherine of Aragon, at Parson's Green, where he died on 4th July, 1761. He was buried in St. Bride's, Fleet Street (near Salisbury Court) where his coffin has recently been discovered.

Rather more than a century after Richardson had quitted the Grange, in 1867, Mr. (afterwards Sir Edward) Burne-Jones took the northern portion. At the far end of the spacious garden still stands the studio of that distinguished artist, with its long, narrow slits through which his gigantic canvases were passed in or out. In this pleasance Burne-Jones often conversed with William Morris, to whom the Grange was, indeed, a second home. It is interesting to recall, in passing, that Morris participated very actively in the Applied Arts Section of the Society of Arts, and on several occasions he gave the Society the benefit of his ripe judgment. Early in 1892 he read a memorable paper on "The Woodcuts of Gothic Books", for which he was awarded the Society's silver medal. This paper, fully illustrated, was published in Volume 40 of the *Journal*.

It was at the Grange that Burne-Jones painted many of his most famous pictures, and there he died on 17th June, 1898.

In seeking to save this interesting building, hallowed by so many historical, literary and artistic associations, the Grange Preservation Committee is mindful of the words of William Morris himself, who, in founding the Society for the Protection of Ancient Buildings, wrote to the Editor of the *Athenæum*: "What I wish for is that an association should be set on foot to keep a watch on old monuments . . . . and

by all means, literary and other, to awaken a feeling that our ancient buildings are not mere toys, but sacred monuments of the nation's growth and hope".

NOTES ON BOOKS

A BACKGROUND FOR BEAUTY. *By Arnold Silcock. Andrew Melrose*, 1951. 50*s*

Since Plato men have tried to define beauty. The great metaphysicians, like Hegel, have done so within their own terms of reference, so that, if we reject their premises, their definitions fall to the ground. The sage Gœthe cautiously said: "What is beauty? I cannot tell you, but I can show it to you". And that is the best that one can do, point out beauty in nature and art. But these are only subjective judgments without general validity.

We all think we know what beauty is, but we cannot define it in a way which will provide a yardstick for assessment, defy contradiction and not admit of exception. Apart from individual differences which are slight but important, there are great differences when we go from one age to another or from the West to the East. The Chinese ideal of beauty, as Mr. Silcock points out, is fundamentally different from the European ideal.

The Chinese view of the pictorial arts starts from a conception of man and nature which, from a Western point of view, is mystical; the Western view, which stems from Greece, is bound up with the search for the "real" and in painting and sculpture came to rest at lifelike representation, and only within recent times has this point of view been abandoned—but for how long we do not know.

"The Chinese attitude to art as symbolism was already implicit in their works before the time of Plato. If there had been the possibility of an exchange of views there is no doubt that the Chinese would have entirely disagreed with Plato's theory that art is not symbolic expression but the attempt directly to imitate the aspect of things seen in Nature" (page 17).

The history of art is the history of man's search for beauty. From the drawings on the walls of cave dwellers to Henry Moore, the span is some ten thousand years or so, from art as an act of magic to art for art's sake. We feel we know a little about several patches of art history, but lack a connected view of the whole; and we lack this connected view because we have not the key to the interpretation of the whole. *A Background for Beauty* is an attempt to supply such a key, "a picture of art development as it affects our Western art".

It is a personal approach: Mr. Silcock weaves his way in and out of Ancient and Modern, Eastern and Western art, with appropriate quotations and comparisons which are ingenious and show his knowledge of art history. And he has mercifully spared us the dry-as-dust style of so many art historians. Here is an example of his style and his choice of quotation: " . . . . and during a sea voyage we in the West would be more predisposed to see the horizontally undulating sea-serpent on the horizon, where a Chinese would be predisposed to see a dragon soaring vertically from the sea into the clouds. We therefore appreciate the inverted truth that lies behind the fantasies in children's nonsense rhymes, such as the one which begins:

He thought he saw a Banker's Clerk
Descending from a bus:
He looked again, and found it was
A Hippopotamus. . . . "

Mr. Silcock treats his subject organically, as it were, and not quantitatively—there are comparatively few names and dates—and the result is delightful as well as instructive.

R. W. SYMONDS

SHORT NOTES ON OTHER BOOKS

THE DUTCH MASTERS. *By Horace Shipp. Newnes*, 1952. 25*s*.

An introduction to the society in which the greatest Dutch painters worked, and to their predecessors of the sixteenth century, is here followed by a detailed account of the seventeenth century, with short biographies of individual painters. There are a number of full-page plates, sixteen of them in colour.

HISTORICAL ARCHITECTURE. *By Hugh Braun. Faber*, 1953. 63*s*

Architecture from Mesopotamia to the industrial era, and in Europe and the Islamic East, is here described and illustrated. The author is largely concerned with the development of one style out of another, and with the influence on the West of Byzantium and Islam. There are many fine photographs.

A DICTIONARY OF BRITISH SCULPTORS. *By M. H. Grant. Rockliff*, 1953. 50*s*

This dictionary covers the thirteenth to the twentieth centuries; the entries vary between the one or two pages given to more important or better known sculptors, and the two or three lines which record the name and century of those who appear to be known only through entries in the Royal Academy catalogues. There is an appendix giving the names of some later sculptors, and an index to sitters and titles of sculptural works. Living sculptors with a few exceptions are not included.

ENQUIRIES INTO THE HISTORY OF ART-HISTORICAL WRITING: Studies of art-historical functions and terms up to 1850. *By Dr. Evert van der Grinten. (Venlo, published by the author*, 1953.)

Dr. van der Grinten's work attempts to show how a vocabulary of art-history, and a common understanding of its terms, have been built up through the writings of historians and biographers from Villani, writing around 1400, to 1850. He analyzes the work of a number of important writers, and gives a bibliography.

FROM THE JOURNAL OF 1853

VOLUME I. *29th July*, 1853

From Miscellanea

DECIMAL COINAGE.—The Committee have concluded the examination of witnesses, and it is understood the result will be a unanimous report in favour of the adoption of the decimal system of coinage and currency, making the pound sterling the integer, and dividing it into 1,000 units or farthings. Dr. Bowring—on whose motion in parliament the first step was taken in 1848, by the coinage of the florin, or one-tenth of a pound sterling—was the last witness examined, and gave most satisfactory evidence as to the extraordinary accuracy, rapidity, and facility with which all calculations are made and all accounts kept under a decimal system throughout the vast Chinese Empire, with its four hundred millions of dependent subjects. He produced the instrument (abacus) by which arithmetic is taught in all the schools of China, and stated that a Chinese youth after a month's instruction is far more competent to apply all the rules of arithmetic to the business of life than a learner on our plans of instruction would be after the teaching of years. It was suggested in the Committee that the use in all our elementary schools of the abacus would greatly facilitate and popularize the introduction of a decimal system of currency and account.